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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,399	07/24/2007	Soon-Tae Ahn	SAMH100002000	8173
22891 7590 03/11/2011 LAW OFFICE OF DELIO & PETERSON, LLC. 121 WHITNEY AVENUE NEW HAVEN, CT 06510				
EXAMINER				
KESSLER, CHRISTOPHER S				
ART UNIT		PAPER NUMBER		
1733				
MAIL DATE		DELIVERY MODE		
03/11/2011		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/583,399

Applicant(s)

AHN, SOON-TAE

Examiner

CHRISTOPHER KESSLER

Art Unit

1733

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of Claims

1. Responsive to the amendment filed 29 December 2010, no changes are made to the claims. Claims 1-6 are currently under examination.

Status of Previous Rejections

2. Responsive to the amendment filed 29 December 2010, the prior grounds of rejection are maintained.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 5 and 6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are rejected for the reasons stated in the prior Office action.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0066576 A1 (hereinafter "Ahn"). The examiner notes that Ahn is the pregrant publication corresponding to 6,752,880 cited by applicant.

Ahn is applied to the claims as stated in the prior Office action.

Response to Arguments

7. Applicant's arguments filed 29 December 2010 have been fully considered but they are not persuasive.

Applicant argues that the claimed step of heating without plastic deformation is described in the specification inherently by way that there is no plastic deformation while heating recited. However, the examiner disagrees. The claim limitation in question reads "wherein the steel is induction heated without plastic deformation." This claim limitation is not necessarily a limitation only on the physical act of plastic deformation taking place simultaneously to the heating. Rather than using claims 5 and 6 so as to further limit the ***processes used*** in the heating step, applicant has chosen to further limit the ***steel used*** in the heating step Applicant's own specific examples describe that

the wire is plastically deformed prior to the induction heating, and thus applicant's inventive examples fall outside the scope of claims 5 and 6. Further, there is no positive limitation that the steel is induction heated without plastic deformation. See the prior Office action for more information.

Applicant argues that Ahn does not teach the invention because Ahn does not teach the combination of prior austenite grain size, yield strength, and tempering parameter falling within ranges as claimed. Applicant has stated in the Remarks at page 6 that this combination of three properties is required to achieve unexpected advantages in terms of low-temperature impact absorption property. However, Ahn teaches that each of the prior austenite grain size, yield strength, and tempering parameter are within ranges overlapping the instantly claimed range. The examiner notes that while Ahn does not explicitly describe the formula for P as claimed, the tempering temperature and time are such that the range of P in the invention method of Ahn would overlap that claimed (see [0041]). Thereby a prima facie case of obviousness exists.

Applicant argues that the Comparative Examples in Table 2 of the instant disclosure correspond to the invention of Ahn. However, Applicant has provided no further information as to which of the specific examples correspond to Ahn, nor is there any evidence to corroborate that statement or measurement of the specific parameters required by Ahn (NxYS). Since Ahn teaches overlapping ranges for each of the three parameters in question, the evidence of unexpected results must be sufficient to show criticality of the ranges as claimed.

Applicant argues that the ranges as claimed are critical to the invention, as shown in Table 2. In the instant case, the evidence presented is not commensurate with the scope of the claims. The evidence presented does not show criticality of the claimed ranges of tensile strength, nor of prior austenite grain size. There are no examples of prior austenite grain size at 20 μm , nor are there any examples reasonably close to 20 μm , either above or below the claimed range endpoint, that would show why 20 μm is critical. The evidence presented does not show criticality of the claimed range of tensile strength. There are no examples of tensile strength of equal to or below 70 kgf/mm^2 , nor are there any examples of tensile strength equal to 130 kgf/mm^2 , and only two examples are shown with tensile strength of above 130 kgf/mm^2 , but those examples each have tempering parameters falling outside the claimed range as well. There is no explanation as to whether the inferior impact absorption energy at -40°C is due to the tensile strength falling outside of scope, the tempering parameter falling out of scope, or some combination of the two.

The data presented fail to demonstrate criticality of the ranges that applicant has stated are critical. When considered as a whole, the evidence of obviousness outweighs the evidence of nonobviousness, and the prior rejection grounds are maintained.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER KESSLER whose telephone number is (571)272-6510. The examiner can normally be reached on Mon-Fri, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Roy King/
Supervisory Patent Examiner, Art
Unit 1733

csk